

LISTING OF CLAIMS

1. (previously presented) A system for inspecting a specimen, comprising:

an illumination system comprising an arc lamp able to provide light energy having a wavelength in the range of approximately 285 to 320 nanometers; and

an imaging subsystem oriented and configured to receive said light energy from said illumination system and direct light energy toward said specimen, said imaging subsystem comprising a plurality of lenses and having a field size, wherein a ratio of lens diameter to field size is less than 100 to 1.

2. (previously presented) The system of claim 1, wherein said imaging subsystem further comprises a mangin mirror arrangement.

3. (previously presented) The system of claim 1 where the arc lamp has the ability to operate at wavelengths from 266-320nm.

4. (cancelled)

5. (previously presented) The system of claim 1, further comprising collection optics for collecting light energy reflected from said specimen, wherein the collection optics are catadioptric.

6. (previously presented) The system of claim 1 where the imaging and illumination subsystems support at least one of a group of inspection modes comprising bright field, ring dark field, directional dark field, full sky, aerial imaging, confocal, and fluorescence.

7. (previously presented) The system of claim 1 where the imaging subsystem uses a varifocal system for the full magnification range.

8. (previously presented) The system of claim 1 where separate imaging lenses are used for specific magnification increments.

9. (previously presented) The system of claim 1, further comprising a data analysis subsystem for analyzing data representing the light energy reflected from the specimen, wherein the data analysis subsystem has the ability to record defect position for any defect on the specimen.

10. – 68. (cancelled)

69. (previously presented) The system of claim 3 wherein the arc lamp has the ability to operate at wavelengths from approximately 266-600nm.

70. (previously presented) The system of claim 5 where the catadioptric optics support wavelengths from approximately 266 – 600nm.

71. – 74. (cancelled)

75. (new) A system for inspecting a specimen, comprising:
an illumination system able to provide light energy having a wavelength within a predetermined range; and

an imaging subsystem oriented and configured to receive said light energy from said illumination system and direct light energy toward said specimen, said imaging subsystem comprising a plurality of lenses and having a field size, wherein a ratio of lens diameter to field size is less than 100 to 1.

76. (new) The system of claim 75, wherein the predetermined range is approximately 285-320 nanometers.

77. (new) The system of claim 75, wherein said imaging subsystem further comprises a mangin mirror arrangement.

78. (new) The system of claim 75, further comprising collection optics for collecting light energy reflected from said specimen, wherein the collection optics are catadioptric.

79. (new) The system of claim 75, where the imaging and illumination subsystems support at least one of a group of inspection modes comprising bright field, ring dark field, directional dark field, full sky, aerial imaging, confocal, and fluorescence.

80. (new) The system of claim 75, where the imaging subsystem uses a varifocal system for the full magnification range.

81. (new) The system of claim 75, where separate imaging lenses are used for specific magnification increments.

82. (new) The system of claim 75, further comprising a data analysis subsystem for analyzing data representing the light energy reflected from the specimen, wherein the data analysis subsystem has the ability to record defect position for any defect on the specimen.

83. (new) A system for inspecting a specimen, comprising:
an illumination system able to provide light energy having a wavelength within a predetermined range; and

an imaging subsystem configured to receive said light energy and direct light energy toward said specimen using a plurality of lenses, said imaging subsystem having a field size, wherein a ratio of lens diameter to field size for all of the plurality of lenses is less than 100 to 1.

84. (new) The system of claim 83, wherein said imaging subsystem further comprises a mangin mirror arrangement.

85. (new) The system of claim 83, further comprising a data analysis subsystem for analyzing data representing the light energy reflected from the specimen, wherein the data analysis subsystem has the ability to record defect position for any defect on the specimen.